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Pooling and Unpooling in the Uber Economy

Daniel J. Hemel*

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In August 2014, the online transportation network Uber launched a new service named “UberPool,” which allows Uber users to share the cost of a car ride with strangers traveling along a similar route.¹ In a blog post announcing UberPool, the company hailed the new service as “a bold social experiment” bringing the company and its customers into a “brave new world” of ridesharing.² The blog post added that “the larger social implications of reducing the number of cars on the road, congestion in cities, pollution, [and] parking challenges” are “truly inspiring.”³ In the two years after the August 2014 launch, more than 100 million UberPool rides were recorded, and UberPool came to account for approximately 20% of Uber trips.⁴ In that respect, Uber’s “bold social experiment” in pooling was a resounding success.⁵

While Uber has successfully facilitated pooling among its millions of customers, it has done little to facilitate a different kind of pooling among the 400,000-plus drivers who compose its workforce.⁶ This article focuses on risk pooling (or lack thereof), and specifically on five types of risk: health risk, longevity risk, mortality risk, disability risk, and productivity risk. Millions of employees participate in workplace-based pooling arrangements that serve to insure them against risks of these types. Platforms such as Uber, however, have thus far failed to provide the same sort of pooling benefits to the workers on whose labor they rely.

This article examines the present state of workplace-based risk pooling in the age of Uber. Part I explains the basic problem of adverse selection in individual insurance markets. Part II describes the ways in which workplaces have served to pool particular risks, and then goes on to highlight the advantages and disadvantages of workplace-based risk pooling as against individual insurance markets. Part III provides an overview of economy-wide trends: while Uber and similar online platforms have contributed to unpooling in specific sectors, a bird’s-eye view of the labor market makes clear that workplace-based risk pooling has always left a significant

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¹ Announcing UberPool, UBER NEWSROOM (Aug. 5, 2014), <https://newsroom.uber.com/announcing-uberpool> [<https://perma.cc/WHZ2-9SYV>].

² See id.

³ See id.

⁴ Get Ready to Share: UberPOOL Launches in Singapore, UBER NEWSROOM (June 29, 2016), <https://newsroom.uber.com/singapore/get-ready-to-share-uberpool-launches-in-singapore> [<https://perma.cc/L9LM-GBSF>].

⁵ UBER NEWSROOM, supra note 1.

⁶ For the 400,000 driver figure, see New Survey: Drivers Choose Uber for Its Flexibility and Convenience, UBER NEWSROOM (Dec. 7, 2015), <https://newsroom.uber.com/driver-partner-survey> [<https://perma.cc/3T3A-FKXL>].

segment of the U.S. population unpooled. Part IV considers possible private-sector and public-sector responses to the problems that unpooling poses.

I. Adverse Selection in Individual Insurance Markets

The problem of adverse selection in individual insurance markets is explained most easily by way of example. Imagine a population with two groups of equal sizes: the Eggshells and the Hardrocks. Let's say that the Eggshells have expected accident costs of \$50 and the Hardrocks have expected accident costs of \$30. (We could replace accident costs with any other conceivably insurable expenses: healthcare costs, disability costs, etc.) Both the Eggshells and the Hardrocks are risk averse, and so both assign a higher value to insurance than their expected accident costs. To keep the math simple, we'll assume that the value of insurance to any individual is 120% times expected accident costs, so the Eggshells would pay \$60 for a policy that provides full coverage and the Hardrocks would pay \$36 for the same policy. Assume for now that individuals know whether they are Eggshells or Hardrocks, but insurers either practically or legally cannot distinguish between the two types.

What will happen if insurers offer full coverage policies at cost (i.e., no profit margin)? If the insurer can sell to Eggshells and Hardrocks in equal numbers, then the insurer might initially set the premium at \$40 (the average expected cost for members of the population). The Eggshells will purchase insurance because $\$60 > \40 ; the Hardrocks will not because $\$36 < \40 . If all the Hardrocks drop out of the market, the insurer's average expected cost for customers in the risk pool will be \$50. Assuming no profit margin, insurers will then set premiums at \$50; Eggshells will pay; and Hardrocks will not. A separating equilibrium emerges: even though individual riskiness is unobservable, the premium causes Eggshells and Hardrocks to separate themselves into different groups (with the Eggshells purchasing insurance and the Hardrocks not).

To appreciate the social costs of adverse selection, compare this separating equilibrium to a scenario in which Eggshells and Hardrocks remain in the same risk pool. If there are 50 Eggshells and 50 Hardrocks, the social surplus (benefit minus cost) from insuring all 100 individuals is equal to $50 \times (\$60 - \$50) + 50 \times (\$36 - \$30) = \$800$. In the separating equilibrium, only the Eggshells acquire insurance, and the social surplus is $50 \times (\$60 - \$50) = \$500$.

The example above is intended to show that a single risk pool encompassing Eggshells and Hardrocks can increase social welfare. One might also argue on distributional grounds that pooling is preferable to separating: Behind the veil of ignorance, before we know whether we are Eggshells or Hardrocks, we would want to insure against the risk of being an Eggshell. Adverse selection raises the cost of premiums for the Eggshells, and thus increases the downside of losing the natural lottery.⁷

We might imagine further iterations involving a menu of insurance contracts rather than a binary choice between full insurance and no insurance. A rich literature in economics explores the range of possible outcomes when insurance contracts of varying generosity are offered under

⁷ See David M. Cutler & Richard J. Zeckhauser, Adverse Selection in Health Insurance, in 1 FRONTIERS IN HEALTH POLICY RESEARCH 1, 9–10 (Alan M. Garber ed., 1998).

conditions of asymmetric information.⁸ The conclusions of that literature defy easy summary, but a fair generalization is that individuals often go with suboptimal amounts of insurance absent some sort of subsidy.⁹

The running example of the Eggshells and Hardrocks can serve to illustrate the efficiency of a subsidy. With a subsidy of any more than \$4, Hardrocks will return to the insurance market. If all 50 Eggshells and all 50 Hardrocks purchase insurance, then the average cost to the insurer will be \$40; the value of full coverage to Hardrocks is still \$36; and the insurance offer plus subsidy is now attractive to the Hardrocks. Eggshells, of course, will remain in the market just as before. Another way to achieve the same objective might be to impose an insurance mandate: Eggshells and Hardrocks alike could be required to acquire coverage. Subsidies and mandates are not mutually exclusive: the Affordable Care Act is a familiar example of the two combined.

While mandatory risk pooling would increase overall welfare and might be desirable on distributive justice grounds, it is not—at least in this case—Pareto-efficient: it makes Eggshells better off but Hardrocks worse off ($\$36 < \40). Note, moreover, that the example does not account for the problem of moral hazard. If individuals have some control over whether they become Eggshells or Hardrocks, then a single risk pool with a uniform premium might promote inefficient behavior because individuals incur less of a cost if they become Eggshells. So too, insured individuals will have less of an incentive to reduce their risk, and so we might expect a higher overall accident rate when all individuals are fully insured than when only the Eggshells are insured.

For present purposes, the important point is that under some conditions, unsubsidized individual insurance markets will leave significant segments of the population without coverage, and that forcing high-risk and low-risk individuals into the same pool can be welfare-enhancing. The next section turns to ways in which workplace-based risk pools accomplish that function.

II. Pooling in the Workplace

This part focuses on five risks often pooled among employees of a firm: health risk, longevity risk, mortality risk, disability risk, and productivity risk. Five themes run throughout. First, workplace-based risk pools benefit from government subsidies that are often unavailable to participants in individual insurance markets. Second, workplace-based risk pools sometimes (though not always) mitigate adverse selection problems by pushing high-risk and low-risk individuals into the same pools. Third, workplace-based risk pooling takes advantage of the division of labor, with human resource specialists aiding employees with enrollment and other insurance plan interactions. Fourth and relatedly, workplace-based pooling arrangements potentially reduce administrative costs through scale economies. Fifth and finally, firms

⁸The seminal paper on the subject is Michael Rothschild & Joseph Stiglitz, Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information, 90 Q. J. ECON. 629 (1976). For a more recent analysis by the same authors, see Michael Rothschild & Joseph E. Stiglitz, Competition and Insurance Twenty Years Later, 22 GENEVA PAPERS ON RISK & INS. THEORY 73 (1997).

⁹ See Rothschild & Stiglitz, Equilibrium in Competitive Insurance Markets, *supra* note 8, at 644.

sometimes (though again, not always) enjoy advantages over individual insurance providers in managing moral hazard. These advantages of workplace-based risk pooling are reflected in part by the high level of participation among large-firm employees. But the advantages of workplace-based risk pooling are not unqualified, and the analysis in this part notes some ways in which workplace-based risk pooling may be problematic.

A. Health Risk

The model of the Eggshells and the Hardrocks in Part I is perhaps most applicable to the health insurance setting. The workplace serves as a potential site for the pooling of health risks across high-risk and low-risk individuals. First and foremost, federal income tax law provides a strong incentive for employees—regardless of their health status—to seek insurance through the workplace. An employer’s contribution to a health plan for an employee or the employee’s spouse, dependent, or child is excluded from gross income under section 106 of the Internal Revenue Code.¹⁰ Section 106 effectively subsidizes employer-provided health insurance in an amount equal to the product of the employer’s excluded payment and the employee’s marginal tax rate. To continue with the example from Part I of the Eggshells and the Hardrocks, imagine that both groups face a marginal tax rate of 25%. The Eggshells are indifferent between \$80 in pre-tax wages and an insurance policy providing benefits that they value at \$60; the Hardrocks are indifferent between \$48 in pre-tax wages and an insurance policy providing benefits that they value at \$36. If the employer gives employees the option of sacrificing \$40 in pre-tax wages in exchange for health insurance coverage with no deductibles or copays, the Eggshells and the Hardrocks will both accept.

The Affordable Care Act gives a further incentive for employers to offer health insurance to employees.¹¹ The ACA added section 4980H to the Internal Revenue Code, which imposes an annual per-employee penalty of \$2,000 on employers with more than 50 full-time employees who fail to sponsor health insurance through the workplace if at least one of those employees

¹⁰ 26 U.S.C. § 106(a) (2012); 26 C.F.R. 1.106-1(a). Note that self-employed individuals and individuals who are not eligible for employer-subsidized plans can claim an above-the-line income tax deduction for health insurance as well. 26 U.S.C. § 162(l) (2012); cf. 26 U.S.C. § 401(c) (2012) (defining “employee” for purposes of § 162(l) and other statutes to include self-employed individuals). An employee who opts out of employer-subsidized coverage and instead chooses to purchase insurance on the individual market would not be eligible for the deduction. Also, employer contributions to employee health insurance are excluded from the payroll tax base, see 26 U.S.C. § 3121(a)(2) (2012), whereas individuals (including self-employed individuals) who purchase insurance on the individual market cannot deduct premiums for payroll tax purposes.

¹¹ The American Health Care Act proposed by House Republican leaders in early March 2017 has the potential to reverse the incentive so that employees are better off in after-tax terms if their employers do not offer health insurance. See Daniel Hemel, The House GOP Plan and Employer-Sponsored Health Insurance: Killing It Softly?, WHATEVER SOURCE DERIVED (Mar. 10, 2017), bit.ly/2mRPCOt; cf. American Health Care Reform Act of 2017, H.R. 277, 115th Cong., 1st Sess. (2017).

enrolls in an ACA-subsidized plan.¹² The combination of carrot and stick—a subsidy for employer-sponsored health insurance plans through section 106, and a penalty for failing to sponsor such a plan under section 4980H¹³—has resulted in virtually all large employers offering health insurance to employees. In one 2015 survey, 99% of large firms (50 employees or more) reported that they offer health insurance to full-time employees.¹⁴

Beyond the subsidies for participation and the penalties for opting out, there are at least four more reasons why employees might choose to participate in workplace-based health risk pools rather than acquiring health insurance on the individual market. First, adverse selection may be less severe because employees match with employers based on a number of factors other than health insurance. In the individual market, we might expect to see high-risk individuals select into (and low-risk individuals select out of) generous health plans; we might think it less likely that high-risk and low-risk individuals will sort across workplaces based on the generosity of employee health benefits. Second, many individuals lack the time or the background knowledge to navigate a complex web of health insurance options; delegating decisionmaking to a human resource specialist can serve as a way to pool cognitive costs.¹⁵ Third, costs for sales, marketing, brokers' fees, and other administrative expenses are significantly lower in the large-employer market than in the individual market: unsurprisingly, the cost incurred by an insurer in selling a policy to a 50-employee firm is well below the cost of selling individual policies to each

¹² 26 U.S.C. § 4980H (2012).

¹³ The Affordable Care Act applied a similar carrot-and-stick approach to support the individual health insurance market. For the carrots, the ACA provides subsidies to help low- and moderate-income households purchase insurance on the individual market, *see* 26 U.S.C. § 36B (2012), as well as subsidies for insurers that cover low- and moderate-income households, *see* 42 U.S.C. § 18071 (2012). For the stick, the ACA's individual mandate imposes a requirement to maintain minimum health insurance coverage, with a penalty for noncompliance of \$695 or 2.5% of income (whichever is greater). *See* 26 U.S.C. § 5000A (2012). Early evidence suggests that adverse selection has remained a significant problem in the individual health insurance market notwithstanding the ACA's positive and negative incentives for health individuals to enroll. *See Newly Enrolled Members in the Individual Health Insurance Market After Health Care Reform: The Experience from 2014 and 2015*, BLUECROSS BLUESHIELD (Mar. 20, 2016), <https://www.bcbs.com/about-us/capabilities-initiatives/health-america/health-of-america-report/newly-enrolled-members> [<https://perma.cc/32MP-UYDH>]; *see also* Matthew Panhans, *Adverse Selection in ACA Exchange Markets: Evidence from Colorado* (Dec. 2016) (unpublished manuscript), https://sites.duke.edu/matthewpanhans/files/2016/10/Panhans_Matthew_JMP.pdf [<https://perma.cc/6TG2-TWA3>].

¹⁴ TRANSAMERICA CTR. FOR HEALTH STUDIES, TRANSAMERICA CENTER FOR HEALTH STUDIES SURVEY: COMPANIES NAVIGATE THE HEALTH COVERAGE MANDATE 11 (Dec. 2015).

¹⁵ On the inability of individuals to make rational health insurance choices, *see* Saurabh Bhargava, George Loewenstein & Justin Sydnor, *Do Individuals Make Sensible Health Insurance Decisions? Evidence from a Menu with Dominated Options* (Nat'l Bureau of Econ. Research, Working Paper 21160, May 2015), <http://www.nber.org/papers/w21160>.

of the 50 employees.¹⁶ Fourth, and finally, we might expect that employers, who already observe employees on a regular basis, enjoy an absolute advantage vis-à-vis insurers when it comes to managing moral hazard.¹⁷

Before concluding that all is well with workplace-based health risk pooling, four caveats are in order. First, the 99% figure for full-time employees at large firms does not mean that all workers have the option of enrolling in health insurance through their workplace: coverage rates are considerably lower for part-time employees and employees of smaller firms.¹⁸ Second, a rapidly rising percentage of covered workers are enrolled in plans with an annual deductible of \$1,000 or more.¹⁹ In many cases, workers with employer-sponsored health insurance are receiving less comprehensive coverage than they were a few years ago. Third, most employers that sponsor health insurance for their employees offer a choice among multiple plans.²⁰ While more choice might sound like an unmitigated good, such choice can also reproduce the adverse selection problem at the workplace level: employees who know they are sick opt into the more generous plans; employees who know they are healthy opt into the less expensive, high deductible plans; and the separation that might be anticipated in the individual market is replicated in the large group market.²¹ Fourth and finally, workplace-based pooling of health risk may lead to “job lock,” with workers failing to make productivity-improving job switches because they are worried about leaving their existing health insurance plans and provider networks.²²

¹⁶ See CONG. BUDGET OFFICE, PRIVATE HEALTH INSURANCE PREMIUMS AND FEDERAL POLICY 36 tbl.A-1 (Feb. 2016).

¹⁷ The experience thus far with workplace-based wellness programs, however, has not given us much reason to believe that employer interventions can significantly improve employee health. See SOEREN MATTKE, RAND. INST., WORKPLACE WELLNESS PROGRAMS STUDY FINAL REPORT (2013).

¹⁸ The Transamerica survey reports that 30% of firms with 500 or more employees offer health insurance to part-time employees; that figure drops to 26% for firms with 50 to 499 employees and 8% for firms with fewer than 50 employees. Meanwhile, 61% of firms with fewer than 50 employees report that they offer health insurance to full-time employees. See *id.*

¹⁹ In 2006, 10% of covered workers were enrolled in these high deductible plans. By 2015, the figure had increased to 46%. See KAISER FAMILY FOUND. AND HEALTH RESEARCH & EDUCATIONAL TRUST, EMPLOYER HEALTH BENEFITS 2015 ANNUAL SURVEY 5 (2015).

²⁰ According to a 2015 survey by the federal Agency for Healthcare Research and Quality, approximately 50.2% of private-sector firms that sponsor health insurance for their employees offer two or more plan options. See AGENCY FOR HEALTHCARE RESEARCH & QUALITY, MEDICAL EXPENDITURE PANEL SURVEY tbl. I.A.2.d (2015), https://meps.ahrq.gov/data_stats/summ_tables/insr/national/series_1/2015/tia2d.pdf [<https://perma.cc/7RUW-RTDB>].

²¹ For a case study illustrating the phenomenon of within-firm adverse selection among Harvard University employees, see David M. Cutler & Sarah J. Reber, Paying for Health Insurance: The Trade-Off Between Competition and Adverse Selection, 113 Q.J. ECON. 433 (1998).

²² On employer-based health insurance and job lock, see Jonathan Gruber, Health Insurance and the Labor Market, 1 HANDBOOK OF HEALTH ECONOMICS 645, 654-58 (A.J. Cuyler & J.P. Newhouse eds., 2000).

To sum up so far: Workplaces have emerged as the primary sites for the pooling of health risks outside of Medicare and Medicaid. This fact can be attributed to tax incentives for employer-sponsored health insurance, penalties under the Affordable Care Act for large employers that fail to provide coverage, and certain structural features that make it generally easier and cheaper for workers to procure health insurance coverage through their employers rather than on the individual market. But millions of Americans have been left outside workplace-based health risk pools, and workplace-based health risk pooling carries social costs as well as benefits.

B. Longevity Risk

The notion of insuring against the risk of longevity might seem strange on first glance, since most of us think of long life as a blessing rather than a risk.²³ But the risk of outliving one's savings is a real one—and one that it is difficult to insure against on the individual market. In theory, individuals can insure against longevity risk by purchasing annuities that guarantee monthly payments for the rest of their lives. In practice, however, the same adverse selection problems that we might expect to see in the individual health insurance market plague the annuity market as well.²⁴ Here, the roles of the Eggshells and the Hardrocks are reversed: it is the healthy, long-lived individuals who are costlier to insure, and the frailer, shorter-lived individuals who drop out of the market.

In an insightful 1990 paper, Zvi Bodie argued that “[e]mployer pension plans offer a way of overcoming the adverse selection problem” in the annuity market.²⁵ Employers can accomplish this, according to Bodie, “[b]y making participation in the plan mandatory and offering life annuities as the only payout option.”²⁶ At the time of Bodie’s article, “defined benefit” pension plans, which approximate employer-provided annuities, were the most common arrangement among U.S. employees covered by workplace-based pension plans.²⁷ By requiring employees to participate in such plans, employers could ensure that the longevity risk pool remained representative of the workforce as a whole rather than being dominated by longer lived (and thus costlier-to-insure) individuals.

Over the last three and a half decades, however, we have witnessed a dramatic decline in defined benefit pension plan participation and a corresponding shift toward defined contribution

²³ But see NATALIE BABBITT, TUCK EVERLASTING (1975).

²⁴ See Amy Finkelstein & James Poterba, Adverse Selection in Insurance Markets: Policyholder Evidence from the U.K. Annuity Market, 112 J. POL. ECON. 183 (2004); see generally Benjamin M. Friedman & Mark J. Warshawsky, The Cost of Annuities: Implications for Saving Behavior and Bequests, 105 Q. J. ECON. 135 (1990).

²⁵ Zvi Bodie, Pensions as Retirement Income Insurance, 28 J. ECON. LIT. 28, 35 (1990).

²⁶ Id.

²⁷ See id. at 30 n.5 (citing TRENDS IN PENSIONS tbl.4.6 (John A. Turner & Daniel J. Beller eds., 1989)).

plans.²⁸ The causes of this shift are complicated. Legal and regulatory changes no doubt played an important role. The Employment Retirement Income Security Act of 1974 (ERISA)²⁹ and the Revenue Act of 1978³⁰ created individual retirement arrangements (IRAs) and defined contribution 401(k) plans, respectively; these vehicles allow workers to gain the advantage of tax deferral without participating in a defined benefit plan. But while the emergence of IRAs and defined contribution 401(k) plans may have been a necessary condition for the shift, the availability of these alternatives was not a sufficient condition: the tax deferral advantages of IRAs and defined contribution 401(k) plans are in some cases similar to—and in other cases less generous than—the tax deferral advantages of defined benefit pension plans.³¹

Edward Zelinsky notes several additional changes in the legal landscape that may have accelerated the shift away from defined benefit plans.³² Among others: ERISA imposed intricate “minimum funding” rules that applied to sponsors of defined benefit but not defined contribution plans,³³ and imposed federal fiduciary standards on employers that are easier to satisfy with

²⁸ For an overview, see James M. Poterba, Steven F. Venti & David A. Wise, The Decline of Defined Benefit Retirement Plans and Asset Flows, in SOCIAL SECURITY POLICY IN A CHANGING ENVIRONMENT 333 (Jeffrey Brown, Jeffrey Liebman & David A. Wise eds., 2009).

²⁹ Pub. L. 93-406, title II, § 2002(b), 88 Stat. 959 (1974) (codified as amended at 26 U.S.C. § 408).

³⁰ Pub. L. No. 95-600, 92 Stat. 2763, 2785-87 (1978) (codified as amended at 26 U.S.C. § 401(k)).

³¹ In a defined benefit plan, the employer makes annual contributions such that the plan can meet its defined benefit obligations, given certain actuarial assumptions. For 2017, the maximum benefit is the lesser of (a) 100% of the participant’s average compensation for her highest three consecutive calendar years, or (b) \$215,000 (with the latter amount to be adjusted in future years for changes in the cost of living). See 26 U.S.C. § 415(b) (2012); Retirement Topics—Defined Benefit Plan Benefit Limits (Oct. 28, 2016), INTERNAL REVENUE SERVICE, <https://www.irs.gov/retirement-plans/plan-participant-employee/retirement-topics-defined-benefit-plan-benefit-limits> [<https://perma.cc/S6VL-LF65>].

For workers with high peak-year compensation, the allowable contribution to a defined benefit plan will likely exceed the \$18,000 cap for defined contribution 401(k) plans (or \$24,000 for workers 50 and over making catch-up contributions). See Retirement Topics - 401(k) and Profit-Sharing Plan Contribution Limits, INTERNAL REVENUE SERV., (Oct. 31, 2016), <https://www.irs.gov/retirement-plans/plan-participant-employee/retirement-topics-401k-and-profit-sharing-plan-contribution-limits> [<https://perma.cc/HGF7-ZVGA>]; see generally Paul Sullivan, Save for Retirement in Just 10 Years? It’s Doable, But Risky, N.Y. TIMES (Nov. 30, 2012), <http://www.nytimes.com/2012/12/01/your-money/defined-benefit-plans-allow-fast-retirement-saving-but-with-risks.html> [<https://perma.cc/NB9V-WL7A>] (noting that the allowable contribution to a defined benefit plan for a highly compensated worker in her 50s could potentially exceed \$250,000 a year). For a younger, lower-wage worker, the defined contribution 401(k) cap may be higher than the defined benefit cap.

³² See Edward A. Zelinsky, The Defined Contribution Paradigm, 114 YALE L.J. 451, 471–81 (2004).

³³ See 26 U.S.C. § 412 (2012); 29 U.S.C. §§ 1081–1086 (2012); Zelinsky, supra note 32, at 475.

respect to defined contribution plans than defined benefit plans.³⁴ Broader labor market trends, including the decline of unions and increasing employee mobility, may have reinforced ERISA's effects.³⁵

Whatever the causes, the consequences of the shift away from defined benefit pensions and toward a "defined contribution paradigm" are stark. The share of private sector workers participating in defined benefit plans has fallen from 38% in 1979 to 13% in 2013, while the share participating in defined contribution plans has risen from 17% to 44%.³⁶ While the share of private sector workers covered by any employee pension plan has remained relatively constant over that period (45% in 1979, 46% in 2013),³⁷ the extent to which workplaces serve as sites of longevity risk pooling has decreased drastically.

C. Mortality Risk

The flip side of longevity risk (the risk of outliving one's retirement savings) is mortality risk (the risk of dying before retirement). A breadwinner's death during peak earning years results in a negative shock to household income. A worker who wants to guarantee a smooth consumption path for her spouse, children, or other dependents may therefore want to acquire insurance against mortality risk (i.e., life insurance).

One might expect to see adverse selection in the individual life insurance market just as one sees adverse selection in the individual annuity market. If individuals who expect to live shorter lives select out of the annuity market, then those same individuals will select into the life insurance market—or so we might anticipate. The evidence on adverse selection in the life insurance market is, however, more mixed. On the one hand, David McCarthy and Olivia Mitchell find that individuals who purchase life insurance in the United States live longer, on average, than the population as a whole, though McCarthy and Mitchell also note that this difference may be driven at least in part by the fact that high income individuals are more likely than lower income individuals to (a) have the resources available to purchase life insurance and (b) outlive the median life expectancy.³⁸ On the other hand, Daifeng He finds that individuals who purchase life insurance in the United States die sooner than the general population after controlling for age, gender, smoking status, health status, medical history, and family history.³⁹ He notes that life insurers often consider these variables in setting prices for individual policies.⁴⁰

³⁴ See Zelinsky, *supra* note 32, at 478–479.

³⁵ Zelinsky, *supra* note 32, at 480–81.

³⁶ FAQs About Benefits—Retirement Issues, EMPLOYEE BENEFIT RESEARCH INST., <https://www.ebri.org/publications/benfaq/index.cfm?fa=retfaq14> [<https://perma.cc/YKQ7-V2D4>] (last visited Dec. 22, 2016).

³⁷ *Id.*

³⁸ David McCarthy & Olivia S. Mitchell, *International Adverse Selection in Life Insurance and Annuities*, in 3 *AGEING IN ADVANCED INDUSTRIAL STATES: RIDING THE AGE WAVES* 119, 127–129 (Shripad Tuljapurkar, Naohiro Ogawa & Anne E. Gauthier eds., 2010).

³⁹ Daifeng He, *The Life Insurance Market: Asymmetric Information Revisited*, 93 J. PUB. ECON. 1090, 1093–95 (2009).

⁴⁰ *Id.* at 1095.

The results of He's study suggest that individuals with private information about their own life expectancy do select into/out of life insurance on the basis of that information.⁴¹

Whether or not adverse selection occurs in the individual life insurance market, quite a bit of mortality risk pooling occurs in the workplace. In 2013, group life insurance accounted for approximately 32% of total death payments by U.S. life insurers⁴² and 42% of all life insurance in the United States by face amount,⁴³ though less than 21% of net premium receipts.⁴⁴ Not all group life insurance is employer-based: some unions and professional associations offer group life insurance as well.⁴⁵ Overall, though, employed-based group life insurance is quite common, with approximately 72% of full-time workers in the United States having access to life insurance through their employers in 2014 and 71% participating in employer-based life insurance.⁴⁶

Federal tax law strongly incentivizes employers to provide term life insurance coverage of up to \$50,000 for employees; employer-paid premiums up to that coverage cap are excluded from the employee's gross income for federal income tax and payroll tax purposes.⁴⁷ (Note that life insurance death benefits are also excluded from income under section 101.⁴⁸) In dollar terms, the tax expenditure for employer-provided group term life insurance is tiny in comparison to the expenditure for employer-sponsored health insurance,⁴⁹ but the economics are similar: in both cases, federal tax law effectively subsidizes workplace-based risk pooling such that even low-risk workers find it worthwhile to participate.

D. Disability Risk

Disability risk might be considered a subspecies of health risk (see Section II.A above) or productivity risk (see Section II.E below); it is, in any event, a type of risk for which individual insurance markets are vulnerable to moral hazard and adverse selection. Perhaps unsurprisingly, private disability insurance in the United States is primarily procured through the group rather than individual market: measured by premiums paid, group insurance accounted for more than three-quarters of the U.S. disability insurance market in 2013.⁵⁰ Coverage rates vary dramatically across sector, with participation exceeding 50% among managerial and professional workers and below 20% among service sector workers. Overall, the share of full-time workers participating

⁴¹ Id.

⁴² AM. COUNCIL OF LIFE INSURERS, 2014 LIFE INSURERS FACTBOOK 47 (2014).

⁴³ Id. at 66 tbl.7.1

⁴⁴ Id. at 38 tbl.4.3

⁴⁵ Id. at 65.

⁴⁶ GEN RE, LIFE & HEALTH FACT BOOK, 2015-2016, at 51 (2014). Among part-time workers, 13% had access to life insurance through their employers and 11% participated. Id.

⁴⁷ 26 U.S.C. § 79(a).

⁴⁸ 26 U.S.C. § 101 (2012).

⁴⁹ For the 2017 fiscal year, the Treasury Department estimates that the tax expenditure for employer-sponsored health insurance will be \$222 billion, compared to \$2.58 billion for employer-provided group term life insurance. U.S. DEP'T OF THE TREASURY, OFFICE OF TAX ANALYSIS, TAX EXPENDITURES 34 tbl.3 (Sept. 28, 2016).

⁵⁰ GEN RE, LIFE & HEALTH FACT BOOK, 2015-2016, supra note 46, at 61–62.

in workplace-based disability insurance in 2013 was 48% for short-term disability coverage and 43% for long-term disability coverage. The comparable figures for part-time workers were 13% (short-term) and 11% (long-term).⁵¹

Federal income tax law encourages employer-based disability insurance, though not in a straightforward way. Employer-paid disability insurance premiums are excludable from the employee's gross income, though with the consequence that future disability benefits are fully taxable.⁵² However, disability is generally associated with a drop in income, and so the disabled beneficiary's marginal income tax rate at the time of inclusion is likely lower than the employee's marginal income tax rate at the time of exclusion. In this respect, disability insurance provided by an employer allows insured employees to shift taxable income from higher bracket years to lower bracket years.

E. Productivity Risk

Productivity risk refers to the risk that a worker's marginal product of labor will drop unexpectedly. A worker may turn out to be less productive than anticipated on a particular day because of a migraine headache, or less productive for a week because of the flu, or less productive for a year because of a time-consuming and distracting divorce. She may find that her particular skill is less valuable because of a macroeconomic swing (e.g., the bankruptcy lawyer in boom time, or the mergers and acquisitions lawyer in a downturn). Or her particular site might attract less traffic because of events beyond her control (e.g., the barista at a specific Starbucks location may see her productivity decline when the metro stop next to her café closes temporarily for renovation).

In some cases, the worker may be able to purchase insurance so that negative shocks to her productivity do not affect her consumption. (The mergers and acquisitions lawyer, for example, might short the S&P 500.) In many other cases, however, such insurance will be impossible to procure. Premiums may be prohibitively high on account of moral hazard. For example, the worker may be less likely to get a flu shot if she knows that she is protected against the negative productivity shock from losing a week of work, and the insurer—knowing this as well—will be less willing to provide coverage unless at a steeper price. Adverse selection may push premiums higher still. For example, workers who know that they are migraine-prone will be more likely to buy headache insurance; insurers, knowing that, will raise their prices; only the most migraine-prone workers will be willing to insure at the higher price; and so on.

Firms enjoy two significant advantages over individual insurance markets with regard to productivity risk pooling across workers. First, managers monitor workers who are in close proximity (and co-workers in close proximity monitor each other). In theory, an insurer

⁵¹ *Id.* at 50–51.

⁵² See INTERNAL REVENUE SERV., LIFE INSURANCE & DISABILITY INSURANCE PROCEEDS, <https://www.irs.gov/help-resources/tools-faqs/faqs-for-individuals/frequently-asked-tax-questions-answers/interest-dividends-other-types-of-income/life-insurance-disability-insurance-proceeds/life-insurance-disability-insurance-proceeds-1> [<https://perma.cc/D8X8-5EK8>] (last updated Jan. 1, 2016).

providing productivity insurance to a particular worker could try to police shirking via site visits and video monitoring, but the manager has obvious advantages over the insurer (e.g., greater familiarity with the requirements of the job and the factors that might influence productivity, scale and specialization advantages from monitoring all of the workers at a specific site rather than a small number of workers at one site and a small number at another).⁵³ Second, workplace-based productivity risk pools might be less vulnerable to adverse selection than an individual insurance market would be. I might accept a job when I think that I will underperform expectations and earn a wage that exceeds the marginal product of my labor,⁵⁴ but I also might accept a job when I think that I will outperform expectations and rise through the firm's ranks.

Workplaces are sites at which workers pool productivity risk. The criterion for productivity risk pooling is that compensation varies less than the marginal product of labor. This generally will be true when workers receive a fixed wage or salary (even when they also earn commissions, tips, or bonuses). It may also be true when workers are compensated on the basis of firm-level profitability rather than personal performance (e.g., partners at a law firm with a lock-step compensation structure).⁵⁵

Federal tax law encourages the pooling of productivity risk across workers. The federal income tax code is progressive: rates rise as taxable income increases. This feature of the tax code generates an incentive for workers to smooth income across years. For example, Person A, an unmarried individual with taxable income of \$10,000 one year and \$10,000 the next, will pay less in federal income taxes than Person B, an unmarried individual with taxable income of \$12,000 one year and \$8,000 the next.⁵⁶ Note that even if Person B could purchase productivity insurance on the individual market, she would still bear a tax cost from income volatility.⁵⁷

Note also that even when workplaces facilitate the pooling of productivity risk, workers are still exposed to employment risk. A worker with a fixed wage whose productivity declines might not experience an immediate decline in income, but she is more likely to lose her job. In

⁵³ Firms might also be able to take steps that reduce the risk of negative productivity shocks (e.g., on-site flu vaccination clinics).

⁵⁴ A note to my dean: I of course did not think this when I accepted an assistant professorship at the University of Chicago Law School.

⁵⁵ On productivity risk pooling at law firms, see Ronald J. Gilson & Robert H. Mnookin, Sharing Among the Human Capitalists: An Economic Inquiry into the Corporate Law Firm and How Partners Split Profits, 37 STAN. L. REV. 313 (1985).

⁵⁶ Under the rate tables in effect for 2017, Person A would pay \$1033.75 each year (\$2067.50 total). Person B would pay \$1333.75 the first year and \$800 the second (\$2133.75 total). See Rev. Proc. 2016-55. On income volatility and its costs for low-income workers, see generally Lily L. Batchelder, Taxing the Poor: Income Averaging Reconsidered, 40 HARV. J. ON LEG. 395 (2003).

⁵⁷ If amounts received under productivity insurance plans were treated like amounts received under accident and health plans, then Person B's premiums would not be tax deductible and payouts would not be included in gross income. See 26 U.S.C. 105 (2012). The tax consequences would be the same as if she did not have productivity insurance (i.e., she would face an effective penalty for income volatility).

this respect, the pooling of productivity risk at the firm level exposes workers to even more employment risk. Consider that if wages were to vary with the marginal product of labor, then a worker whose productivity declined would see her wage decline but her employer would have no incentive to lay her off. If wages are sticky, however, employers will have an incentive to fire workers when the marginal product of the worker's labor drops below the worker's wage.⁵⁸

This last point suggests that if income smoothing is the objective, pooling of productivity risk at the firm level is not an unmitigated good. Indeed, it is not entirely clear whether firm-level pooling of productivity risk leads to more or less income volatility overall: as a result of firm-level pooling, an individual worker will be exposed to less of an income shock when she experiences a productivity decline and keeps her job, but more of an income shock when she experiences a productivity decline and loses her job. Remember that in the absence of firm-level pooling, the productivity decline would not lead to job loss; it would simply lead to a decline in compensation. This analysis suggests that even though the workplace can function as a site of productivity risk pooling, the workplace is not necessarily the optimal site for such pooling.

F. Pools of Pools

Analyzing each of these five risks separately—health risk, longevity risk, mortality risk, disability risk, and productivity risk—arguably understates the overall advantage of workplace-based risk pooling. Workplace-based pooling of multiple risks frees employees from the burden of shopping for several different types of insurance policies: within the setting of a large firm, employees can rely on human resource specialists to guide them through a maze of insurance options. Not only can this economize on cognitive costs for employees, it can also lead to administrative cost savings because insurance is procured through a small number of transactions between employer and insurer rather than a larger number of transactions involving individual employees. Workplace-based risk pooling also introduces an element of “collective bargaining”: not collective bargaining in the traditional sense as between employees and employer, but bargaining between employer and insurer with the employer acting on employees' behalf. Employers procuring insurance on the group market may enjoy bargaining power advantages unavailable to any individual. So too, the bundling of insurance policies at the workplace level may mitigate adverse selection problems insofar as certain cross-subsidies offset each other. For example, the same worker may be a Hardrock with respect to health risk but an Eggshell with respect to longevity risk (or vice versa). All of this is to suggest that when it comes to risk pooling, there may be economies of scope as well as scale.

III. Unpooling in the Uber Economy

⁵⁸ See Hamish Low, Costas Meghir & Luigi Pistaferri, Wage Risk and Employment Risk over the Life Cycle, 100 AM. ECON. REV. 1432, 1433 (2010) (“In a fully competitive labor market with no worker-firm match heterogeneity and no search costs, the distinction between employment and productivity risk would be meaningless because unemployment would arise only due to low productivity resulting in the individual's market wage being below the reservation wage. Unemployment itself would not be a source of risk.”).

As emphasized in Part II, workplaces potentially serve as sites for the pooling of health risk, longevity risk, mortality risk, disability risk, and productivity risk. None of this pooling occurs, however, among workers in the so-called “gig economy.”⁵⁹ The Uber experience offers a stark illustration. While Uber offers drivers the benefits of flexibility and autonomy,⁶⁰ it does not offer health insurance, pension benefits, life insurance, or disability insurance (although it has partnered with other providers to make it easier for drivers to enroll in health insurance and set up an IRA).⁶¹ And Uber does little to insure drivers against productivity risk: a driver’s income can vary dramatically depending on the number of passengers she picks up, whether “surge pricing” is in effect,⁶² the price of gasoline, and a range of other factors.⁶³

But while Uber illustrates the unpooling phenomenon, Uber and other gig economy platforms play only a small role in unpooling on an economy-wide basis. Much of what we know about the size of the gig economy comes from Census Bureau statistics on “nonemployer firms,” businesses with no paid employees.⁶⁴ An Uber driver operating as a sole proprietor or through an S corporation or limited liability company would constitute one nonemployer firm, as would a homeowner who earns income by renting out spare rooms on Airbnb. The ranks of nonemployer firms also include, however, many workers outside the gig economy, ranging from doctors and lawyers in solo practice to hot dog stand proprietors and private piano teachers.

In 1997, there were 8.3 payroll employees per nonemployer firm in the United States.⁶⁵ By 2014, the ratio of payroll employees to nonemployer firms had fallen to 6.1-to-1. In certain sectors, the change was more dramatic: for instance, the ratio of payroll employees to nonemployer firms fell by more than 40% in some segments of the passenger ground transportation industry. And yet of the 9 million nonemployer firms that have emerged since

⁵⁹ See generally Christina Farr, Who's Responsible for Your Uber Driver's Health Coverage?, NPR (Oct. 11, 2015), <http://www.npr.org/sections/health-shots/2015/10/11/447157698/who-s-responsible-for-your-uber-driver-s-health-coverage> [<https://perma.cc/2AUL-5ZJ4>]

⁶⁰ Or so the company claims. See New Survey: Drivers Choose Uber for Its Flexibility and Convenience, UBER NEWSROOM (Dec. 7, 2015), <https://newsroom.uber.com/driver-partner-survey>.

⁶¹ See Heather Long, Uber Tests Program To Help Drivers Save for Retirement, CNN MONEY (Aug. 24, 2016), <http://money.cnn.com/2016/08/24/investing/uber-save-for-retirement-betterment> [<https://perma.cc/N6B6-N7CK>].

⁶² On surge pricing, see M. Keith Chen & Michael Sheldon, Dynamic Pricing in a Labor Market: Surge Pricing and Flexible Work on the Uber Platform (Dec. 21, 2015) (unpublished paper).

⁶³ On income volatility in the gig economy, see Natasha Singer, In the Sharing Economy, Workers Find Both Freedom and Uncertainty, N.Y. TIMES (Aug. 16, 2014), <https://www.nytimes.com/2014/08/17/technology/in-the-sharing-economy-workers-find-both-freedom-and-uncertainty.html> [<https://perma.cc/NY9U-8SHM>].

⁶⁴ Ian Hathaway & Mark Muro, Tracking the Gig Economy: New Numbers, BROOKINGS INST. (Oct. 13, 2016), <https://www.brookings.edu/research/tracking-the-gig-economy-new-numbers> [<https://perma.cc/GGT9-GS4K>].

⁶⁵ That does not mean one in every 9.3 workers was self-employed, however, as some workers were full-time or part-time employees of a multiemployee establishment while operating a nonemployer firm on the side.)

1997, the passenger ground transportation industry accounts for only about 200,000.⁶⁶ Uber and Lyft illustrate the growth of the nonemployer economy but they hardly explain that growth on their own.

Unpooling, moreover, is not merely a phenomenon among the self-employed. Most workers are not enrolled in workplace-based short-term or long-term disability insurance; almost half are not enrolled in workplace-based life insurance;⁶⁷ and only a small sliver are still enrolled in workplace-based defined benefit pension plans.⁶⁸ Even at its peak, defined benefit plans covered less than half of private sector workers in the United States.⁶⁹ The promise of workplace-based risk pooling was never fully realized even in the pre-Uber economy. And so in analyzing the future of workplace-based risk pooling, it is important not to glorify the state of pooling in the past. In theory, workplace-based risk pooling can mitigate problems of moral hazard and (especially) adverse selection that plague individual insurance markets; in practice, workplace-based risk pooling has always left a large segment of the U.S. population unpooled.

IV. The Future of Pooling

So far, this article has highlighted the ways in which workplaces can serve as sites of risk pooling—and ways in which workplaces oftentimes do not perform that function. This last part considers the ways in which risk pooling might continue to occur notwithstanding the rise of Uber and nonemployer firms more generally.

One possibility is that workers will value pooling so much that firms like Uber and Lyft—or their competitors—will realize that they can do better (i.e., can attract more skilled/competent workers and/or can save by cutting cash compensation) if they establish

⁶⁶ Ian Hathaway & Mark Muro, Tracking the Gig Economy: New Numbers, BROOKINGS INST. (Oct. 13, 2016), <https://www.brookings.edu/research/tracking-the-gig-economy-new-numbers> [<https://perma.cc/GGT9-GS4K>].

The increase of 200,000 might seem small given that Uber alone had added more than 160,000 drivers by the end of 2014. See Jonathan V. Hall & Alan B. Krueger, An Analysis of the Labor Market for Uber's Driver-Partners in the United States (Jan. 22, 2015) (unpublished manuscript). Note, though, that Uber's rise has come at the same time as a fall in the number of taxi drivers in many U.S. cities, and the drivers potentially displaced by Uber operated as nonemployer firms as well. See, e.g., Leonor Vivanco, Number of Chicago Taxi Drivers Hits 10-Year Low as Ride-Share Companies Take Off, CHI. TRIB. (Dec. 17, 2016), <http://www.chicagotribune.com/news/ct-chicago-taxi-driver-decline-met-20161214-story.html> [<https://perma.cc/3XW7-2F54>].

⁶⁷ GEN RE, LIFE & HEALTH FACT BOOK, 2015-2016, supra note 46, at 50.

⁶⁸ See supra note ___ and accompanying text.

⁶⁹ In 1975, approximately 39% of private sector workers in the United States participated in defined benefit plans. Data for early years is not available, but the total fraction of U.S. private sector workers participating in any pension plan (defined benefit or not) did not exceed one half prior to 1975. EMPLOYEE BENEFIT RESEARCH INST., FACTS FROM EBRI: U.S. RETIREMENT INCOME SYSTEM 5 (1998), <https://www.ebri.org/pdf/publications/facts/1298fact.pdf> [<https://perma.cc/8W6V-QG8D>].

workplace-based risk pools of their own. The founder of Juno, a ridesharing platform with nearly 13,000 drivers in New York City as of August 2016, has spoken about making its drivers employees rather than independent contractors and offering benefits.⁷⁰ So far, however, Juno's most significant moves away from Uber's compensation model have come in the form of lower commissions, optional tipping through the Juno app, and the company's decision to set aside shares of restricted stock for drivers.⁷¹ Employee stock ownership is a far cry from risk pooling—indeed, it is the opposite of risk pooling in that leaves employees even more exposed to the risk that their employer will fail (because firm failure will then result in the employee losing not only her job but also her savings).⁷²

An obstacle to workplace-based risk pooling is the fact that most of the associated tax advantages depend on workers qualifying as “employees.”⁷³ Although the tax law test for whether a worker is an “employee” is not the same as the test under the Fair Labor Standards Act (FLSA),⁷⁴ actions that increase the likelihood of a worker being classified as an employee for income tax purposes might also militate in favor of employee classification for FLSA purposes (e.g., setting hours for work; requiring the worker to work full time; paying the worker by the hour, week, or month).⁷⁵ Firms may rightly fear that making a worker an employee for tax purposes will trigger the application of FLSA's minimum hourly wage and overtime pay requirements. Likewise, firms may be concerned that steps toward qualifying workers as employees for tax purposes will increase tort liability exposure under the doctrine of respondeat superior.⁷⁶

⁷⁰ Aarti Shahani, Uber Competitor In NYC Promises Drivers Benefits, Even Employee Status, NPR (Aug. 22, 2016),

<http://www.npr.org/sections/alltechconsidered/2016/08/22/490655700/uber-competitor-in-nyc-promises-drivers-benefits-even-employee-status> [<https://perma.cc/32BE-W94Y>].

⁷¹ See Claire Martin, Granting Shares for Fares: An Uber Rival's Play for Drivers, N.Y. TIMES (Oct. 1, 2016), <http://www.nytimes.com/2016/10/02/technology/granting-shares-for-fares-an-uber-rivals-play-for-drivers.html> [<https://perma.cc/7RXH-3PWS>].

⁷² For a thoughtful discussion of the relationship between employee ownership and risk bearing, see Henry Hansmann, When Does Worker Ownership Work? ESOPs, Law Firms, Codetermination, and Economic Democracy, 99 YALE L.J. 1749, 1772–73 (1990).

⁷³ See 26 U.S.C. § 79(a) (2012) (exclusion from “gross income of an employee” for employer-paid premiums on up to \$50,000 of group term life insurance); 26 U.S.C. § 106(a) (2012) (“gross income of an employee does not include employer-provided coverage under an accident or health plan”); 26 U.S.C. § 125(d)(1) (2012) (all participants in “cafeteria plan” must be “employees”).

⁷⁴ See Charles J. Muhl, What Is an Employee? The Answer Depends on Federal Law, MONTHLY LABOR REV. (Jan. 2002), <https://www.bls.gov/opub/mlr/2002/01/art1full.pdf> [<https://perma.cc/FFX4-5YAA>].

⁷⁵ The IRS has set forth a 20-factor test for whether a worker is an employee or an independent contractor. See Rev. Rul. 87-41, 1987-1 C.B. 296.

⁷⁶ Cf. Maria Dinzeo, Uber Says It's Not Liable for Drivers' Misdeeds, COURTHOUSE NEWS SERV. (Apr. 1, 2016), <http://www.courthousenews.com/2016/04/01/uber-says-its-not-liable-for-drivers-misdeeds.htm> [<https://perma.cc/NV6J-5BRZ>] (noting Uber's efforts to escape liability for driver's on-the-job conduct).

Lawmakers might encourage workplace-based risk pooling by allowing firms to classify workers as employees for federal income tax purposes without triggering employee classification for FLSA and other labor law purposes. A firm like Uber, then, would be able to contribute to drivers' health insurance and disability insurance, and to offer drivers life insurance coverage of up to \$50,000, without triggering any inclusion of income for the employee. Note, though, that there are costs as well as benefits to this approach. Most significantly, any change that confers tax benefits on Uber drivers will also lead to a loss of revenue for the fisc. It is not obvious that the risk spreading benefits are worth the tax dollars that would have to be sacrificed.

Furthermore, while the federal tax system provides benefits for workplace-based risk pooling among employees, employee status for Uber drivers and other currently self-employed individuals would come with tax disadvantages as well. One tax disadvantage of employee status is the fact that employees who opt for the standard deduction on their individual income tax returns cannot claim a deduction for unreimbursed business expenses.⁷⁷ And even for taxpayers who opt to itemize their deductions, employee status comes with a cost: unreimbursed business expenses are considered "miscellaneous itemized deductions," and miscellaneous itemized deductions below 2 percent of adjusted gross income cannot be deducted on one's individual income tax return.⁷⁸ So long as gig economy workers are paying a large share of business expenses out of pocket, the pooling-related tax benefits of employee classification might not be worth the unfavorable treatment of expenses that comes with it.

Moreover, whether platforms like Uber and Lyft begin to facilitate workplace-based risk pooling, these pools will still leave out non-employee workers who are not platform participants: construction laborers, landscapers, fitness trainers, therapists in solo practice, and millions of others.⁷⁹ Organizations such as the Freelancers Union have sought to pool these "independent workers" to purchase health, life, and disability insurance, and to enroll in a defined contribution 401(k) plan.⁸⁰ But while the Freelancers Union and similar organizations certainly can play an important role in providing information to independent workers regarding individual insurance market offerings, the voluntary association model is unlikely to mitigate the adverse selection problems endemic to individual insurance markets. If, for example, the Freelancers Union offers generous life insurance or disability insurance benefits to members who procure insurance through the organization, then individuals with high mortality or disability risks will select into those benefits. It is hard to see how the voluntary association model might give rise to risk pools that encompass both high-risk and low-risk individuals.

Probably the most straightforward way to establish pools that encompass high risk and low risk individuals is for the government to do so itself. And, indeed, federal programs already

⁷⁷ See 26 U.S.C. § 62(a)(1).

⁷⁸ 26 U.S.C. § 67.

⁷⁹ On the size and composition of the self-employed workforce, see Justin Fox, Where Are All the Self-Employed Workers?, HARV. BUS. REV. (Feb. 7, 2014), <https://hbr.org/2014/02/where-are-all-the-self-employed-workers> [<https://perma.cc/3Y8G-9MP6>].

⁸⁰ See generally Benefits, FREELANCERS UNION, <https://www.freelancersunion.org/benefits/> [<https://perma.cc/V8LX-45KT>] (last visited Mar. 10, 2017).

play an important role in pooling health risk, longevity risk, mortality risk, disability risk, and productivity risk.⁸¹ Medicare and Medicaid facilitate the pooling of health risk among covered individuals (in particular, senior citizens and low income households). Social Security insures workers against longevity risk by providing monthly payments from retirement age until death. Social Security further provides insurance against mortality risk through a system of survivor benefits, and against disability risk by providing income supplements for individuals under retirement age who become unable to work. Meanwhile, a progressive income tax rate structure, coupled with income security programs such as the Earned Income Tax Credit, buffers households against consumption shocks when a breadwinner's productivity declines.⁸²

Yet Social Security was never intended to be the only mechanism by which workers would insure against longevity risk, mortality risk, or disability risk.⁸³ Meanwhile, Medicare, Medicaid, and other public programs provide health insurance to only 36% of the U.S. population.⁸⁴ And the Earned Income Tax Credit was explicitly designed not to provide a catch-all safety net for workers edged out of the labor force.⁸⁵ Asking these programs to serve as substitutes for workplace-based risk pools is asking them to perform a function for which they are ill-designed.

From the observations above, one might draw out an argument for the public sector to play the risk pooling role at which gig economy firms like Uber are failing. It would be a surprise to all, though, if a President Trump and a Republican-led Congress catalyze a change in that direction. If the public sector's risk pooling role is to expand in the second half of the 21st century's second decade, then that change will almost certainly have to come from a level of government other than the federal.

State-level risk pooling is not unprecedented. Massachusetts's "Romneycare" experience is perhaps the most prominent recent example,⁸⁶ and the Social Security Act of 1935 drew lessons from a more modest unemployment insurance scheme implemented by the state of

⁸¹ Safety net programs arguably insure against mortality risk as well by dampening the consumption shock that a spouse, dependent, or child will experience when an income-earning household member dies prematurely.

⁸² See Hal R. Varian, *Redistributive Taxation as Social Insurance*, 14 J. PUB. ECON. 49 (1980).

⁸³ See generally Larry DeWitt, *Research Note #1: Origins of the Three-Legged Stool Metaphor for Social Security*, SOC. SEC. ADMIN. (May 1996), <https://www.ssa.gov/history/stool.html> [<https://perma.cc/Z3K5-N8FW>].

⁸⁴ HENRY J. KAISER FAMILY FOUNDATION, *HEALTH INSURANCE COVERAGE OF THE TOTAL POPULATION*, <http://kff.org/other/state-indicator/total-population/?currentTimeframe=0> [<https://perma.cc/PC54-G6FA>] (last visited Dec. 28, 2016).

⁸⁵ See V. Joseph Hotz & John Karl Scholz, *The Earned Income Tax Credit*, in *MEANS-TESTED TRANSFER PROGRAMS IN THE UNITED STATES* 141, 142 (Robert A. Moffitt ed., 2003) (noting that "[t]he credit began as part of a broader effort by Senator Russell Long (Dem.-La.) to derail congressional and presidential interest in a negative income tax").

⁸⁶ See, e.g., Michael T. Doonan & Katharine R. Tull, *Health Care Reform in Massachusetts: Implementation of Coverage Expansions and a Health Insurance Mandate*, 88 MILBANK Q. 54 (2010).

Wisconsin three years earlier.⁸⁷ A full treatment of state-based risk pooling lies well beyond the space limits of this article and the scope of this symposium. The notion that states might serve as sites for broader risk pooling is, however, a possibility worth exploring in further depth.

Yet a state-based patchwork of risk pools would no doubt leave large swaths of America unpooled. State-based risk sharing might be politically plausible in Oregon or Vermont; it is less so in, say, Oklahoma or Wyoming. Perhaps Blue States can serve as laboratories of democracy that demonstrate the plausibility of public-sponsored pools, just as Wisconsin and Massachusetts did in earlier eras, with the result that the federal government adopts a similar program nationwide. But it will take a President and a Congress much more amenable to new safety net programs before any such scheme is implemented nationally.

In the meantime, we can expect that workplace-based pooling will remain the primary mechanism for risk-sharing across high-risk and low-risk individuals outside the limited confines of Social Security, Medicare, and Medicaid. Meanwhile, millions of workers without traditional employers, hundreds of thousands of whom toil in the growing gig economy, will remain unpooled—unable to insure themselves against health risk, longevity risk, mortality risk, disability risk, and productivity risk except through adverse selection-prone individual insurance markets. What has come to be called the “sharing economy”⁸⁸ might be better described as a “go-it-alone economy,” in which risks are individualized and workers go unpooled. The paradigm of workplace-based risk pooling might not have been perfectly equipped for any era, but it seems particularly ill-equipped for the Uber era. As Uber announces the arrival of a “brave new world,”⁸⁹ its workers are left to brave that world by themselves.

⁸⁷ On the Wisconsin experience, see G. John Ikenberry & Theda Skocpol, Expanding Social Benefits: The Role of Social Security, 102 POL. SCI. Q. 389 (1987).

⁸⁸ See, e.g., The Rise of the Sharing Economy, ECONOMIST (Mar. 9, 2013), <http://www.economist.com/news/leaders/21573104-internet-everything-hire-rise-sharing-economy> [<https://perma.cc/4JCA-4P8S>]; see also ARUN SUNDARARAJAN, THE SHARING ECONOMY: THE END OF EMPLOYMENT AND THE RISE OF CROWD-BASED CAPITALISM (2016). On the inaccuracy of the name “sharing economy,” see Steven Greenhouse, Editorial, The Whatchamacallit Economy, N.Y. TIMES (Dec. 16, 2016), <http://www.nytimes.com/2016/12/16/opinion/the-whatchamacallit-economy.html> [<https://perma.cc/56XR-ZT53>].

⁸⁹ See supra note 1.